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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,587	02/27/2002	Frank Wegner Donnelly	R296 0004	7426
720	7590	11/03/2003	EXAMINER RO, BENTSU	
OYEN, WIGGS, GREEN & MUTALA 480 - THE STATION 601 WEST CORDOVA STREET VANCOUVER, BC V6B 1G1 CANADA			ART UNIT 2837	

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,587

Applicant(s)

DONNELLY ET AL.

Examiner

Bentsu Ro

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6 and 8-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 and 8-40 is/are allowed.
- 6) ☒ Claim(s) 41-46 and 52-58 is/are rejected.
- 7) ☒ Claim(s) 47-51, 59 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

SECOND OFFICE ACTION --- A FINAL REJECTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 41-43, 45, 46, 52-57 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Johnson US Patent No. 6,012,011. (This is a new reference.)

Claims read onto Johnson's teaching as follows:

The claims:

Claim 41 (new): A method of controlling power provided from a direct current power source to a plurality of direct current traction motors, comprising:

(a) determining that at least a first traction motor is experiencing wheel slip while each of the remaining traction motors are not experiencing wheel slip; and

(b) in response to the determining step, terminating power to the at least a first traction motor while continuing to provide power pulses to the remaining traction motors.

Johnson's teaching:

Fig. 1 shows an apparatus (and a method) for controlling power to direct current traction motors 80-83; the direct current is shown at the output of rectifiers 50-53;

the wheel slip of any one of the traction motors is determined by the adhesion loss detector 70 based on the motor speed, see column 9, lines 10-14;

Fig. 3 shows a step 230 which determines the slip of the traction motor if the operating speed exceeds the threshold speed;

see abstract last five lines;

Fig. 3 shows a step 240 to inhibit the power from being applied to the traction motor having slippage;

the non-slip traction motors continuously receive power pulses from the rectifiers 50-53;

it is noted that the rectifiers 50-53 only rectify the positive half cycle of each phase of the alternator 40, therefore, the power received by the traction motors is a pulse-

Claim 42 (new): The method of claim 41, wherein a temporal spacing between adjacent pulses to each motor is maximized.

Claim 43 (new): The method of claim 41 wherein power is cut and then restored to at least a first traction motor,

while maintaining constant power to the remaining motors,

to correct loss of traction on an individual motor.

Claim 45 (new): The method of claim 41 wherein power is also provided to all motors constantly at reduced voltage difference during selected intervals.

type power of positive half cycle, the negative half cycle does not supply to the traction motors, see Fig. 2, the construction of rectifier 50 and column 8, lines 11-44 for the operation.

Applicant's embodiment may be different from that of John's, however, the limitation of claim 42 can be interpreted as follows: the rectifiers 50-53 rectify the positive half cycle in full, the negative half cycle is not rectified at all; thus negative half cycle is a "temporal spacing" between the two positive half cycles, this negative half cycle is a maximum spacing between the two positive half cycles; the positive half cycles are the pulses supplied to the traction motors.

the power to the slip motor is cut and then restored if the speed of the motor returns to the threshold limit, see Fig. 3;

the non-slip motors continuously receive power from the alternator via the rectifiers, see Fig. 2 and abstract;

the cut off of the slip motor and the continuously supply of power to the non-slip motors is an operation to correct loss of traction of the slip motor.

as long as the traction power is required, all motors are energized to provide such a constant traction power; during the power-on period, the voltage to each traction motors is considered similar, therefore, it is a "reduced voltage difference".

Claim 46.

Claim 52 (new): The apparatus of claim 46 wherein said controller comprises a programmable logic controller.

Claim 53 (new): The apparatus of claim 46 wherein said controller comprises a throttle.

Claim 54 (new): The apparatus of claim 46 wherein said controller comprises a power source current sensing device

and a power source voltage sensing device.

Claim 55 (new): The apparatus of claim 46 wherein controller comprises a traction motor current sensing device.

Claim 56 (new): The apparatus of claim 46 wherein said controller comprises a ramping device.

Similar to that of claim 41;

Fig. 2 shows a controller 20, the controller 20 is a computer or a microprocessor, see column 4, line 6.

See column 4, line 16, the words "a throttle".

Fig. 2 shows a current transformer 120;

Fig. 2 also shows a voltage transformer 115 and a voltage transducer 112; it is noted that the current transformer 120 and the voltage transformer 115 are both connected to the alternator 40, therefore, they sense the current and the voltage of the power source 40.

The current provided by the alternator and the current consumed by the traction motors are same, therefore, the current transformer 120 is also a motor current sensing device.

The ramping device performs a ramping function; the ramping function, according to applicant's disclosure, page 5, lines 19-20, is to provide requested throttle level at a rate that is reasonable for the locomotive; Johnson's controller 20 sends a diesel control signal 23 to the diesel engine and an exciter control signal 24 to the alternator to control the desired throttle level, therefore, Johnson also teaches this ramping function (or the ramping device is inside the controller 20).

Claim 57 (new): The apparatus of claim 46 wherein said controller comprises a detection scaling device.

Fig. 2 shows a current transducer 111 for converting a sensed current to a voltage in the order of 0-10 volts, therefore, the current transducer 111 is a detection scaling device; similarly, the voltage transducer 112 for scaling the input voltage to 0-10 voltage range; see column 8, lines 59-62 and column 9, lines 1-7.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 44 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Konrad et al US Patent No. 4,423,362.

Regarding claim 44, Johnson does not teach an overcurrent protection for each motor, however, an overcurrent protection is taught by Konrad et al.

In view of Konrad et al teaching, it would have been obvious to a skilled person in the art to include an overcurrent protection of Konrad's teaching to the traction motor control of Johnson to achieve the same subject matter as claimed.

Why??? Adding Konrad's overcurrent protection to the Johnson's traction motor control will protect the Johnson's motor so that the rectifiers as well as the motors will not over-loaded and thus preventing the rectifiers and the motors from overheat damage.

Regarding claim 58, Konrad's Fig. 2 shows a power regulator system. The power regulator system includes a current limiting scaling block 58 and a current limit block 64. These blocks together constitute a derate evaluation logic device. The function of these blocks is to reduce the power if the requested power causes overcurrent.

Based on applicant's disclosure, page 5, the derate evaluation logic function 28 is to reduce the power demand. Konrad's current limit block 64 functions the same.

5. Claims 4-6, 8-40 are allowable.

6. Claims 47-51, 59, 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Applicant's arguments with respect to all new claims have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

October 30, 2003


Bentsu Ro
Primary Examiner